

1 -- 146. The apparatus of claim 145, further comprising an automatic gain control circuit
2 coupled to said analog to digital converter. --

3 -- 147. The apparatus of claim 145, further comprising a decoder circuit coupled to said
4 digital adaptive equalizer. --

1 -- 148. The apparatus of claim 147, further comprising a media access controller
2 coupled to said decoder circuit. --

1 -- 149. The apparatus of claim 145, wherein said digital adaptive equalizer includes a
2 feedforward equalizer, a data slicer and a decision feedback equalizer. --

1 -- 150. The apparatus of claim 145, wherein said timing recovery circuit regulates the
2 particular rate in accordance with a product of a plurality of peak signal samples. --

1 -- 151. An apparatus that is adapted to be coupled to at least one pair of twisted wires
2 that carry a multi-level signal transmitted at a transmission rate of at least 25 megasymbols
3 per second, comprising:
4

5 an analog to digital converter that is responsive to the multi-level signal
6 transmitted at the transmission rate of at least 25 megasymbols per second;
7 a clock recovery circuit coupled to said analog to digital converter; and,
a digital adaptive equalizer coupled to said analog to digital converter. --

1 -- 152. The apparatus of claim 151, further comprising an automatic gain control circuit
2 coupled to said analog to digital converter. --

1 -- 153. The apparatus of claim 151, further comprising a decoder circuit coupled to said
2 digital adaptive equalizer. --

1 -- 154. The apparatus of claim 153, further comprising a media access controller
2 coupled to said decoder circuit. --

1 -- 155. The apparatus of claim 151, wherein said digital adaptive equalizer includes a
2 feedforward equalizer, a data slicer and a decision feedback equalizer. --

1 -- 156. The apparatus of claim 151, wherein said timing recovery circuit regulates the
2 particular rate in accordance with a product of a plurality of peak signal samples. --

1 -- 157. An apparatus that is adapted to be coupled to at least one pair of twisted wires
2 that carry a multi-level signal, comprising:
3 an analog to digital converter;
4 a clock recovery circuit coupled to said analog to digital converter; and,
5 a digital adaptive equalizer coupled to said analog to digital converter. --

1 -- 158. The apparatus of claim 157, further comprising an automatic gain control circuit
2 coupled to said analog to digital converter. --

1 -- 159. The apparatus of claim 157, further comprising a decoder circuit coupled to said
2 digital adaptive equalizer. --

1 -- 160. The apparatus of claim 159, further comprising a media access controller
2 coupled to said decoder circuit. --

1 -- 161. The apparatus of claim 157, wherein said digital adaptive equalizer includes a
2 feedforward equalizer, a data slicer and a decision feedback equalizer. --

1 -- 162. The apparatus of claim 157, wherein said timing recovery circuit regulates the
2 particular rate in accordance with a product of a plurality of peak signal samples. --

1 -- 163. A method for recovering a multi-level signal transmitted on at least one pair of
2 twisted wires, comprising:

3 converting the multi-level signal to a digital signal at a particular rate;
4 regulating the particular rate of conversion;
5 equalizing the digital signal; and,
6 selecting one of a plurality of levels based on the digital signal. --

-- 164. The method of claim 163, wherein the particular rate is regulated in accordance
2 with a product of a plurality of peak signal samples. --

1 -- 165. The method of claim 163, wherein the particular rate is at least 25 megasymbols
2 per second. --

Sub 167 166. The method of claim 163, decoding the selected level. --

Respectfully submitted,

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